

id vaporization by the air, and of producing a highly inflammable or explosive mixture when combined with the correct volume of air. This is accomplished by drawing through the carburetor or vaporizer both the air and gasoline, as they must be combined in correct proportions to produce an explosive mixture capable of developing the most power from the gasoline.

main closed while the piston completes the second cycle (or movement) as we continue to turn the crank another half turn. This is called the compression stroke of the piston, which, as it returns in the cylinder, compresses the gas into a small space in the end of the cylinder. If this space be about one-fourth the total cylinder volume, the compressed gas will be one-

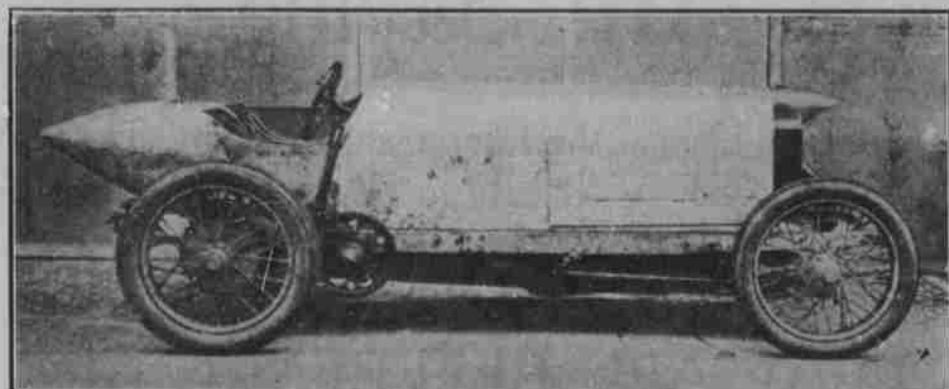
produced may be all utilized in the desired work. By the time this movement is completed the gas will be practically all consumed, the temperature and pressure will be low again, the cylinder will contain some burned (and now useless) gas, and the mechanical energy produced will be imparted to the shaft and fly wheel of the engine by means of the piston and connecting rod. A small portion of this energy will be used by the engine in completing the fourth cycle (or movement) of the piston, which is called the exhaust stroke, and consists of expelling the burned gas through the exhaust valve of the engine, thus cleaning the cylinder and preparing it for repeating the cycle of operations again.

So, in a single cylinder engine, it is apparent that an explosion occurs at every other complete revolution of the engine shaft. In a four cylinder engine, we thus obtain an explosion at each half revolution of the engine shaft, as the same cycle of operations occur in each cylinder, but at different times, so that the explosions follow each other in proper order.

Details of engine construction, as well as those of carburetor and ignition systems, will be treated in other letters, as the whole would be too long to treat here.

It is thus evident that two things are necessary to the production of power in the gas engine, and the first is a suitable carburetor that is so designed and constructed as to maintain a correct mixture of gas at various engine speeds, the second being the electric spark, so arranged as to ignite the gas in the engine cylinder at the most advantageous time.

The mechanical parts of the engine, together with those parts of the car which transmit the power to the rear wheels of the car bear the same relation to the power production that the paper bag does to the ice-cream which we take home in it on a hot summer night.



The Famous Benz Racer, which Hemery recently drove at the rate of 127 miles an hour at Brooklyns, England—This is one of the Fastest Motor Cars ever manufactured.

Therefore, it is apparent that the gas drawn from the carburetor can only be at atmospheric pressure, until raised by some action in the engine. Assuming that we are to start a four-cycle engine that contains no gas, the first step would be to draw some in, which is done by turning (or cranking) the engine shaft over by hand, thus causing the piston to draw (or suck) in through the inlet valve now open a sufficient quantity of gas to fill the space in the cylinder previously occupied by the piston. This is called the suction stroke of the piston, and is the first of the four cycles (or movements) of the piston. At this point the inlet valve should close and re-

fourth its original volume, but its pressure and temperature will both be four times as great.

At this point the gas should be ignited in the cylinder by means of the electric spark produced at the inner terminals of the spark plugs.

The combustion of the gas is so very rapid as to be almost instantaneous, thus producing a high temperature estimated at about 2500 deg. F. and a corresponding pressure of about 300 pounds per square inch on the head of the piston, causing it to move forward again on the third or power stroke of the cycle of movements.

During this stroke of the piston, all openings into the cylinder should be closed, that the power

Modish New Waist Styles

Walker's
CORPORATION

Monday a Great and Stirring Sale

6.50 to 8.50 Spring Waists, 4.95

8.75 to 12.50 Spring Waists, 6.95

It is a new shipment—one entire assortment just placed in stock for advance selling. Monday a sale—the entire lot featured at the above underprice to liven sales in the waist department. It is the most phenomenal event of the season, and we have planned to make it the greatest in selling force. Come early Monday.



The Styles, Materials, Shades—

Designed in the modish new Spring models and fashionably styled to the advance Spring vogue. Made of fine taffetas, crepes, and India fabrics, in blues, blacks, tans, grays, pinks, greens, browns, lavender, etc.—shades that become you. In model they are plain tailored, finished with tucks and wide pleats or elaborately trimmed with net or lace yokes and braids. Long sleeves and high collars. Monday until sold this lot at the above specials—see them, buy Monday while assortments are best.

Waist Dept.—Annex.



TIME CARD

EFFECTIVE
JANUARY 16TH, 1910.

Departure from Salt Lake City.

- 6:45 A.M. For Garfield.
- 7:45 A.M. For Garfield, Tooele, Stockton and Tintic.
- 8:00 A.M. For Provo, Nephi, Mantt and intermediate points.
- 10:30 A.M. For Garfield, Tooele and intermediate points.
- 2:55 P.M. For Garfield.
- 4:10 P.M. For Provo, Payson and intermediate points.
- 8:00 P.M. For Provo, Nephi, Milford, Modena, Acoma and intermediate points.
- 11:00 P.M. For Garfield.

Arrive Salt Lake.

- 1:00 A.M. From Garfield.
- 9:00 A.M. From Garfield.
- 10:00 A.M. From Southern Utah, Nevada, Nephi, Provo and intermediate points.
- 12:30 P.M. From Payson, Provo and intermediate points.
- 1:40 P.M. From Tooele, Garfield and intermediate points.
- 5:40 P.M. From Mantt, Nephi, Provo and intermediate points.
- 6:00 P.M. From Tintic, Stockton, Tooele and intermediate points.

Tickets and further information at City Ticket Office, 169 Main St., or Union Station.

T. C. PECK,
General Passenger Agent.

J. H. MANDERFIELD,
Asst. Gen. Pass. Agent.